

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/635,073	KEITHLEY, DOUGLAS GENE	
	<b>Examiner</b>	<b>Art Unit</b>	
	Devona E. Faulk	2615	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 11/13/2007.
2. ☒ The allowed claim(s) is/are 1-11 and 13-18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, filed 11/13/2007, with respect to the rejection(s) of claim(s) 1-11 and 13-18 under 102(b) and 103 (a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection would have been made in view of the applicant's admitted prior art.
2. Claim 12 is cancelled.
3. The applicant's representative agreed to an examiner's amendment to place the claims in allowable form.

### **EXAMINER'S AMENDMENT**

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Robert A. Blaha (Reg. No. 43,052) on 1/4/2008.

The claims are to be amended as follows:

Claim 1, line 9: after "AND gate", insert - - , operable in accordance with a switch, said AND gate - - .

Claim 1, line 11: after: generate", delete "an output" and insert - - a modulated square-wave - - .

Claim 1, line 14:: after "being" , delete "further coupled to an amplifier subsystem via a filter" and insert - - the only volume control coupled to an amplifier subsystem and the only pin needed to send said modulated square-wave signal and the volume control signal to the amplifier subsystem - - .

Claim 7, line 11: after "conductor", delete "at the interface of an integrated circuit to an amplifier subsystem" and insert - - , the single conductor being the only volume control interface between an integrated circuit and an amplifier system and the only conductor needed to send the modulated square-wave signal and the volume control signal to the amplifier subsystem- - .

Claim 13, line 4: after "via", insert - - only - - .

Claim 13, line 6: after "signal, ", insert - - and said single pin being the only volume control and the only pin needed to send said modulated square-wave signal and the volume control signal to the amplifier subsystem , - - .

Claim 13, line 16: after "AND gate", insert - - , operable in accordance with a switch, said AND gate - - .

### ***Reasons For Allowance***

5. Claims 1-11 and 13-18 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claims 1,7 and 13, prior art Lavaud (US 5,189,705) discloses a square-wave audio signal generator adapted to generate square-wave signal at an audio frequency (pulse I; Figure 2; column 1, line 64-column 2, line 5) ; amplifier subsystem (AMP, speaker , Figure 1) adapted to amplify the signal;

a counter adapted to digitally count from zero to a predetermined number (up/down counter; Figure 2; column 2, lines 1-6); a register adapted to hold a volume control value (MEM, Figure 2; column 2, lines 8-11); a comparator connected to said counter and connected to said register, said comparator adapted to compare a present count from the counter with the volume control value and produce a modulation signal (CMP, Figure 2; column 2, lines 16-27); and an AND gate connected to said square-wave audio signal generator and connected to said comparator, said AND gate adapted to combine, in a logical AND, operation, the square-wave signal with the modulation signal to generate a modulated square-wave signal that is on when both the square wave signal and the modulation signal are on and off when one or both of the square-wave of the square-wave signal and the modulation signal are off (Lavaud discloses an AND gate adapted to combine, in a logical AND, operation, the audio frequency square-wave signal with the modulation signal (AND gate labeled G1; Figure 2) producing a modulated square-wave signal through AND gate. It is known in the art that the truth table for an AND gate is

Input A	Input B	Output Q
0	0	0
0	1	0
1	0	0
1	1	1

With 1=on and 0=off. It is implicit then that the modulated square-wave signal is on when both the square-wave signal and the modulation signal are on and off when one or both of the square-wave signal and the modulation signal is off (Figure 2; column 2, lines 16-30; AND gate labeled G1; Figure 2). Prior art Plunkett, Jr. (US 4,303,998) teaches of an AND gate being controlled or operable by a switch.

Prior art Eddington et al. (US 5,165,017) discloses the concept of an IC chip having a plurality of elements is known in the art as taught by Eddington ( 90 integrated chip, Figure 1; column 8, lines 23-55).

The prior art or combination thereof fails to disclose or make obvious the invention as a whole, and specifically, a single pin of the IC being the only volume control coupled to an amplifier subsystem and the only pin needed to send said modulated square-wave signal and the volume control signal to the amplifier subsystem.

Therefore the prior art or combination thereof fails to disclose or make obvious an integrated circuit, a method of generating a modulated square wave audio signal and an apparatus as claimed.

Claims 2-6,8-11,14-18 are allowed due to dependency on claims 1,7 and 13.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 571-272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Devona E. Faulk

  
VIVIAN CHIN  
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01/07/08